48th CGSIC Meeting - Timing Subcommittee

Savannah, Georgia, 16 September 2008

Chair: **Włodzimierz Lewandowski, BIPM,**
Co-Chair: **Victor Zhang, NIST**

14:00 Introduction – *Włodzimierz Lewandowski, BIPM*
14:20 Report from NIST – *Victor Zhang, NIST*
14:40 USNO Time Service – *Demetrios Matsakis,USNO*
15:00 Timing operations – *Wendy Kelley, USNO*
15:10 Progress on time transfer calibration – *Ed Powers, USNO*
15:20 Break
15:40 Update on the ITU-R WP7A work on the Future of UTC
– *Tom Bartholomew* (invited talk)
16:00 Time and Navigation Exhibition at the Smithsonian: An Update
– *Andrew Johnston, National Museum of American History*
16:20 Discussion
17:20 Session End

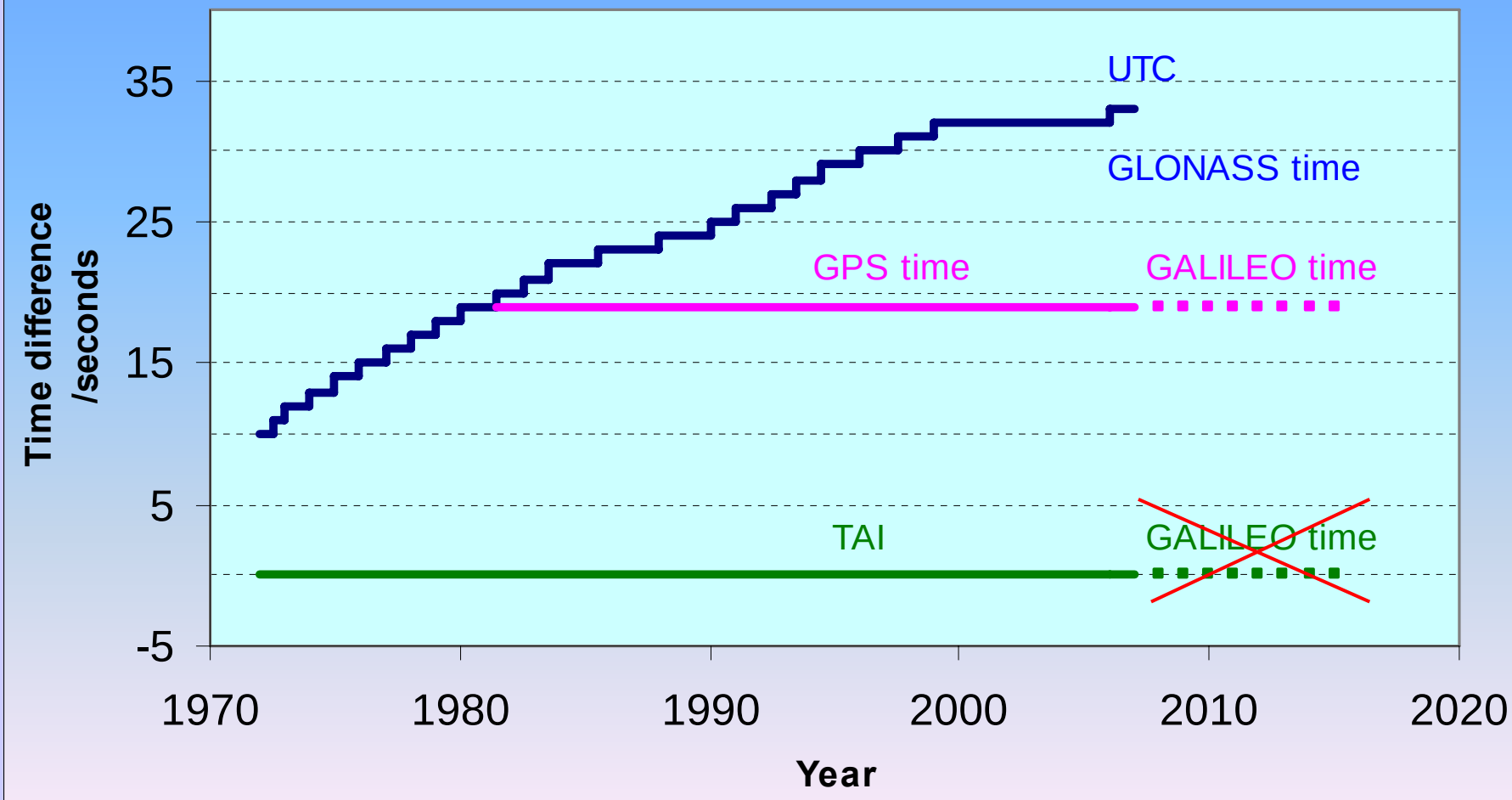
AREAS BEING SERVED

- International Atomic Time (TAI) and UTC
- International Timing Centers
- Global Navigation Satellite Systems
- Telecommunications Industries
- NASA/JPL Deep Space Network
- NIST Global Time Service
- Power Grids and other Industries
- As Research and Comparison Tool
- Other

Outline of presentation

- Change in the definition of international time scales
  - UTC
  - TAI
  - Leap second
- Relation between satellite time scales
  - GPS time
  - Glonass time
  - Galileo system time

[*TAI - Time scale (i)*]



International Committee on Global Navigation Satellite Systems (ICG)
Pasadena, California
8 - 12 December 2008

ICG Draft Recommendation

International Committee on Global Navigation Satellite Systems (ICG)

considering

- **the international value of having many GNSS operational with a composite contribution of several tens of satellites,**
- **the desirability of using all systems interchangeably,**
- **the use by GPS of references very close to UTC and ITRF,**
- **the GLONASS efforts to approach UTC and ITRF,**
- **the Galileo design referring to UTC and ITRF,**
- **that other important satellite navigation systems are now being designed and developed*),**

recommends

- **that the reference times (modulo 1 s) of satellite navigation systems be synchronized as closely as possible to UTC,**
- **that the reference frames for these systems be in conformity with the ITRF,**
- **that these systems broadcast, in addition to their own System Time (ST):**
  1. **the time difference between ST and a real-time realization of UTC,**
  2. **a prediction of the time differences between ST and UTC.**

***) Compass, IRNSS, QZSS, various SBAS, …**

ITU meeting on redefinition of UTC
Geneva, 6 -10 October 2008

To avoid proliferation of time scales ITU plans to stop application of leap seconds to UTC

- October 2008: ITU Working Party 7A will submit to ITU Study Group 7 project recommendation on stopping leap second
- During 2009 Study Group 7 will conduct a vote through mail among member states
- 2011: if 70 % member states agree World Radio Conference will approve recommendation
- 2013: application of leap second will stop and UTC will become a continuous time scale

BIPM

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